

## Study of Asian Strongyliini (Coleoptera, Tenebrionidae)

### XVI. Eight New *Strongylium* Species from Taiwan

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**Abstract** This is the sixteenth part of the study concerning the Asian Strongyliini and deals with eight new species of the genus *Strongylium* from Taiwan, which are described under the following names: *Strongylium wadai* sp. nov., *S. kuantouense* sp. nov., *S. osawai* sp. nov., *S. palingense* sp. nov., *S. laszlorum* sp. nov., *S. chutungense* sp. nov., *S. tehuashense* sp. nov., and *S. chihpenense* sp. nov. A list of *Strongylium* species from Taiwan is also provided.

This paper is the sixteenth part of my study of the Asian Strongyliini, and deals with species of the genus *Strongylium* from Taiwan. I am going to describe eight new species.

Besides the specimens of my collection now preserved in the National Science Museum (Nat. Hist.), Tokyo, materials were supplied by Dr. Ottó MERKL, Természettudományi Múzeum, Budapest, Dr. Chi-Feng LEE, Academia Sinica, Mr. Kaoru WADA, Tokyo, and Mr. Katsumi AKITA, Hisai City. Through the courtesy of Dr. Akiko SAITO, I was able to examine the OSAWA collection preserved in the Natural History Museum and Institute, Chiba.

Appreciation is due to the above persons who offered me the materials, and also to Mr. Seiji MORITA, Tokyo, for taking photographs. Finally, my deepest thanks should be expressed to Emeritus curator, Dr. Shun-Ichi UENO, National Science Museum (Nat. Hist.), Tokyo, for his constant guidance on my taxonomic studies.

Depositories of the holotypes to be designated are given under each description. The abbreviations used herein are as follows: MSMT – National Science Museum (Nat. Hist.), Tokyo; TMB – Természettudományi Múzeum, Budapest; NHMIC – Natural History Museum and Institute, Chiba.

#### *Strongylium wadai* sp. nov.

(Figs. 1, 9, 17–18)

Blackish brown, with apical five segments of antennae, mouth parts, gula, lateral and apical parts of abdomen, and tarsi lighter in colour; head, pronotum except for

apex and base sericeous and not shining, apex and base of pronotum, scutellum and elytra weakly and somewhat sericeously shining, femora, tibiae and ventral surface alutaceous; dorsal surface almost glabrous, antennae and tarsi with fine hairs. Body elongate, longitudinally convex.

Head subdecagonal, covered with isodiametric microsculpture; clypeus semicircular, weakly inclined in basal part, rather strongly bent ventrad in apical part, closely punctate, the punctures becoming closer and coarser in basal part, each with a minute bent hair, fronto-clypeal border not clear; genae before eyes strongly raised laterad, finely punctulate, rugulose in inner parts, with outer margins rounded; frons somewhat T-shaped, gradually inclined anteriad, coarsely rugoso-punctate, interocular space 0.29 times the width of the diameter of an eye, with a vague longitudinal groove medially; vertex weakly convex, closely, irregularly punctate. Eyes large, subreniform in dorsal view, strongly convex laterad, broadly, roundly inlaid into head. Antennae subfiliform, reaching basal 1/5 of elytra, ratio of the length from basal to apical segments: 0.55, 0.23, 1.22, 0.82, 0.78, 0.79, 0.69, 0.62, 0.56, 0.54, 0.58.

Pronotum somewhat barrel-shaped, slightly wider than long (6:5), widest at the middle; apex very slightly produced, rimmed, the rim feebly becoming narrower laterad, finely punctulate, weakly impressed at the middle; base bordered and raised posteriorly, feebly bisinuous, finely punctulate; sides steeply inclined, roundly produced laterad, finely bordered from ventral part, though the borders are not visible from above; front angles rounded, hind angles subrectangular in dorsal view; disc moderately convex, covered with isodiametric microsculpture, rather closely punctate, each puncture with a minute bent hair, with a longitudinal impression along the medial line in basal half, and a pair of oblique impressions close to base. Scutellum sublinguiform, feebly elevated, covered with isodiametric microsculpture, irregularly scattered with microscopic punctures, which are often longitudinally connected with one another.

Elytra 2.33 times as long as wide, 5.88 times the length and 1.87 times the width of pronotum, feebly constricted in basal 1/3, widest at apical 1/3; dorsum longitudinally convex, highest at basal 1/3; disc finely punctato-striate, the striae punctures rather closely set and notching intervals in interior parts, those in lateral parts becoming larger, and those in posterior parts smaller, with 3rd to 5th striae reaching base; intervals convex, less strongly convex in posterior parts, covered with isodiametric microsculpture, scattered with microscopic punctures, weakly aciculate; lateral margins grooved and finely rimmed, the rim almost invisible from above; humeri gently swollen laterad; apices rounded.

Fifth abdominal (anal) sternite weakly covered with isodiametric microsculpture, scattered with microscopic punctures, each with fine bent hair, with apical part weakly concave in male. Legs slender; male protibia gently curved ventrad, with ventral face very weakly gouged and haired in apical half; male metatibia very weakly twisted, with inner face weakly gouged and haired in apical 3/5; ratios of the lengths of pro-, meso- and metatarsomeres: 0.57, 0.48, 0.42, 0.35, 1.22; 1.46, 0.79, 0.63, 0.53, 1.23; 2.24, 1.02, 0.66, 1.27.



Male genitalia elongated subfusiform, 2.72 mm in length, 0.41 mm in width, gently curved in lateral view, with basal piece 1.56 mm in length; fused lateral lobes 1.43 mm in length, irregularly scattered with minute punctures on dorsal surface, and prolonged apicad.

Body length: 22.0 mm.

Holotype: ♂, Pulu Shenmu, Taiwan, 18–VII–1990, K. WADA leg. (NSMT). Paratypes: 1 ex., same data as for the holotype; 1 ex., Pulu Shenmu, 2,000–2,200 m alt., Hualien Hsien, Taiwan, 16–VI–1982, T. SHIMOMURA leg.

*Notes.* This new species resembles *Strongylium lishanum* MASUMOTO, 1981, originally described from Lishan, but can be distinguished from the latter by the smaller body with the head and pronotum more sericeous and less shining, the pronotum barrel-shaped (the apex is obviously narrower than the base in *S. lishanum*), the elytra less strongly striate, and the male genitalia shorter (3.57 mm in the holotype of *S. lishanum*) but the lateral lobes larger.

The specific name is given after Mr. Kaoru WADA, who collected the type specimen.

*Strongylium kuantouense* sp. nov.

(Figs. 2, 10)

Up to the present, this species has been known only from a single female specimen. Since its characteristics are very distinct, I am going to describe it as a new species.

Brownish black, mouth parts, antennae with major apical parts of antennal terminal segments and tarsi brown; dorsal surface weakly, sericeously shining, ventral surface gently, alutaceously shining; each surface almost glabrous. Body rather oblong, convex longitudinally.

Female. Head subdecagonal, weakly covered with isodiametric microsculpture; clypeus semicircular, gently convex in middle, bent ventrad in front, closely punctate, the punctures larger and sparser in medial part, transversely impressed near base, fronto-clypeal border curved and deeply impressed; genae gently raised outwards, scattered with fine punctures, with obtuse outer margins; frons somewhat widely T-shaped, rather strongly, closely, punctate in middle, diatone almost of the same width as the transverse diameter of an eye, with preocular areas depressed and impunctate; vertex with an impunctate area in middle, closely punctate in lateral parts. Eyes subreniform in dorsal view, rather small as compared with those of the members of this genus, gently convex laterad, weakly, obliquely inlaid into head. Antennae subfiliform, reaching base of elytra, ratio of the length of each segment from base to apex: 0.34, 0.16, 0.58, 0.49, 0.48, 0.42, 0.38, 0.35, 0.33, 0.31, 0.35.

Pronotum wider than long (5:4), widest at the middle, weakly roundly narrowed anteriad, almost straightly narrowed posteriad and slightly sinuous before base; apex very feebly emarginate, rimmed, the rim tapering laterad, scattered with fine punctures;

base feebly bisinuous, finely bordered, rimmed, the rim almost impunctate on anterior slope, finely punctulate in posterior slope; sides steeply declined to lateral margins, which are separated from ventral parts by borders and ridges, and visible from above; front angles rounded, hind angles subrectangular; disc moderately convex, covered with isodiametric microsculpture, rather closely punctate, very shallowly grooved and impunctate along median line in basal half, with a pair of shallow impressions slightly before the middle, and also with a pair of oblique impressions close to base. Scutellum widely subpentagonal, weakly covered with isodiametric microsculpture, sparsely scattered with small punctures, feebly aciculate in apical part.

Elytra 2.30 times as long as wide, 4.56 times the length and 1.12 times the width of pronotum, widest at apical 1/3, feebly sinuous in basal 1/3; dorsum rather strongly convex, weakly flattened in basal 1/3; disc punctato-striate, the punctures in striae small and rather densely set, 1st and 2nd striae connected with each other close to base; intervals rather strongly convex, weakly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures, weakly, somewhat transversely micro-aciculate; humeri gently swollen; apices feebly produced, slightly dehiscent.

Legs simple in shape, ratios of the lengths of pro-, meso- and metatarsomeres: 0.28, 0.22, 0.24, 0.25, 0.79; 1.22, 0.62, 0.53, 0.31, 0.96; 1.44, 0.63, 0.32, 0.94.

Body length: 16.0 mm.

Holotype: ♀, Mt. Kuantoushan, Nantou Hsien, C. Taiwan, 13-VI-1993, LUO C.-C. leg. (NSMT).

*Notes.* This new species somewhat resembles *Strongylium okumurai* MASUMOTO, 1981, but can be distinguished from the latter by the slenderer body with the dorsal shape of the head is quite different: the genae not strongly produced laterad but gently produced and subrectangular, the diatone very wide (about the transverse diameter of an eye, and 1/5 times in *S. okumurai*), the eyes subreniform and small (about half in width, much less strongly inlaid into head).

***Strongylium osawai* sp. nov.**

(Figs. 3, 11, 19–20)

Piceous, antennae with apical parts of terminal segments, apical part of anal segment and tarsi brownish; head, pronotum and scutellum weakly shining, elytra moderately shining, gula and central part of metasternum rather strongly shining, the remaining parts of ventral side rather alutaceous; each surface almost glabrous. Body elongate, longitudinally convex.

Head rather wide; clypeus semicircular, weakly depressed and closely, irregularly punctate in basal part, gently inclined in apical part, fronto-clypeal border curved and weakly impressed; genae somewhat rhombic, strongly raised, finely punctulate, with rounded outer margins; frons rather T-shaped, coarsely, irregularly punctate, diatone very narrow, about 1/10 times the width of transverse diameter of an eye; vertex shallowly, irregularly punctate, with a vague median impression. Eyes large, subreniform



in dorsal view, strongly convex laterad, obliquely inlaid into head. Antennae subfiliform, reaching basal 1/5 of elytra, ratio of the length of each segment from base to apex: 0.78, 0.26, 1.58, 1.23, 1.26, 1.11, 1.02, 0.79, 0.82, 0.73, 0.85.

Pronotum short barrel-shaped in dorsal view, 1.11 times as wide as long, widest at the middle, gently narrowed anteriorly, rather noticeably sinuous before base; apex feebly produced, rimmed, the rim tapering laterad and sparsely scattered with minute, somewhat transverse punctures; base deeply bordered, bisinuous, boldly rimmed, the rim almost impunctate on anterior slope, finely punctate on posterior slope; sides convex laterad, steeply inclined laterad, finely bordered from ventral side; front angles rounded, hind angles rather acutely protruded obliquely posteriorly; disc moderately convex, rather noticeably divided with a median groove into two parts, weakly covered with isodiametric microsculpture, rather closely, irregularly scattered with strong punctures, sparsely intermixed with smaller punctures among them, noticeably depressed in middle and lateral parts close to base. Scutellum subequilateral triangular, weakly covered with isodiametric microsculpture, very feebly convex, scattered with small, somewhat obliquely impressed punctures in lateral parts.

Elytra elongate, 2.34 times as long as wide, 4.39 times the length and 1.62 times the width of pronotum, widest at apical 3/8; dorsum longitudinally convex, weakly flattened in basal 1/8, highest at basal 1/5; disc punctato-striate, the punctures in striae small and rather closely set; intervals gently convex, very feebly covered with isodiametric microsculpture, scattered with shallow microscopic punctures, rather noticeably, transversely micro-aciculate; humeri gently swollen; apices rounded.

Male anal sternite weakly depressed and pubescent in apical part. Legs slender; male protibia nearly straight; male mesotibia weakly bent ventrad at apical 1/4; male metatibia with ventral face gouged in apical 1/3, ratios of the lengths of pro-, meso- and metatarsomeres: 0.62, 0.42, 0.38, 0.54, 1.68; 2.37, 1.11, 0.91, 0.78, 1.79; 2.79, 1.22, 0.89, 1.93.

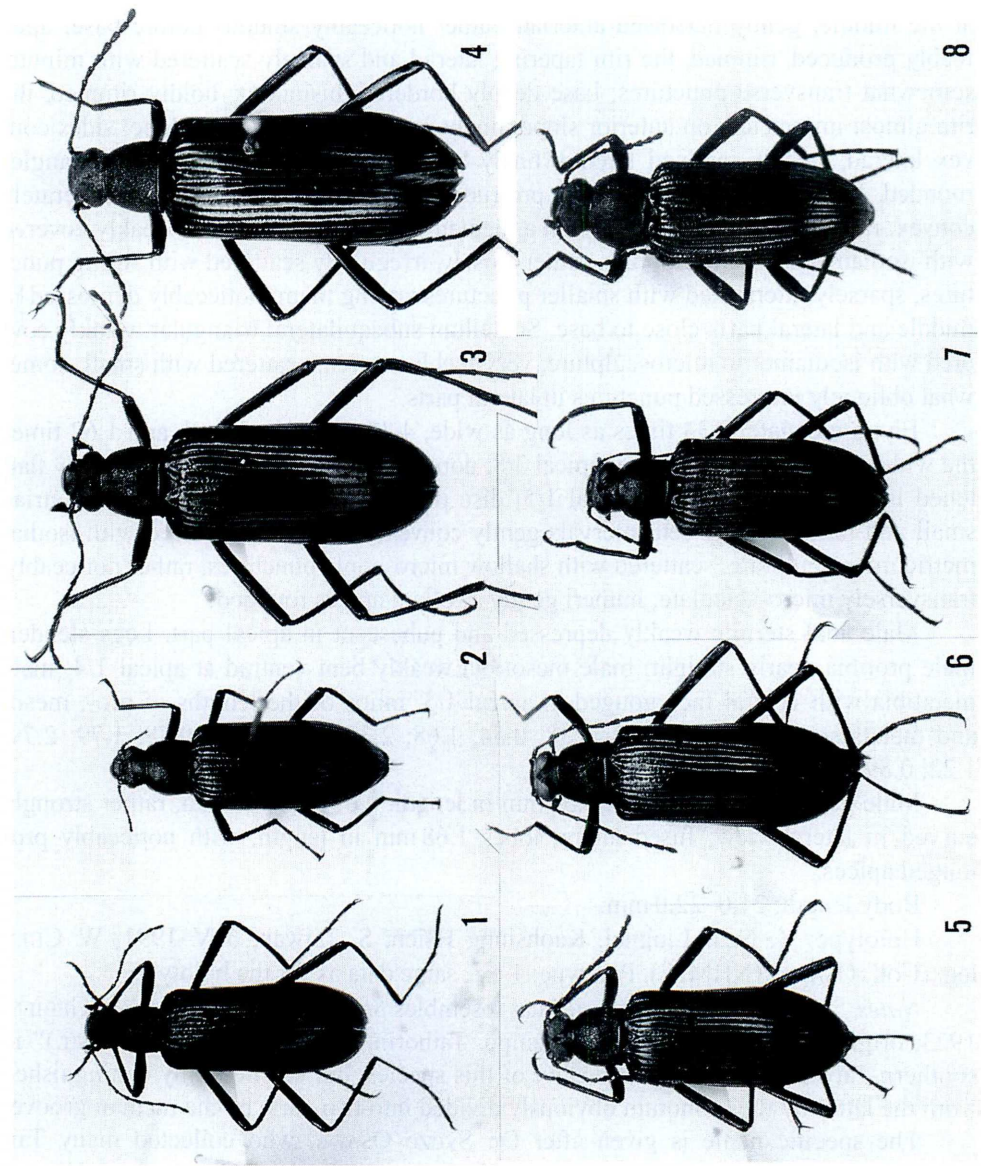
Male genitalia subfusiform, 3.52 mm in length, 0.67 mm in width, rather strongly curved in lateral view; fused lateral lobes 1.68 mm in length, with noticeably prolonged apices.

Body length: 21.0–22.0 mm.

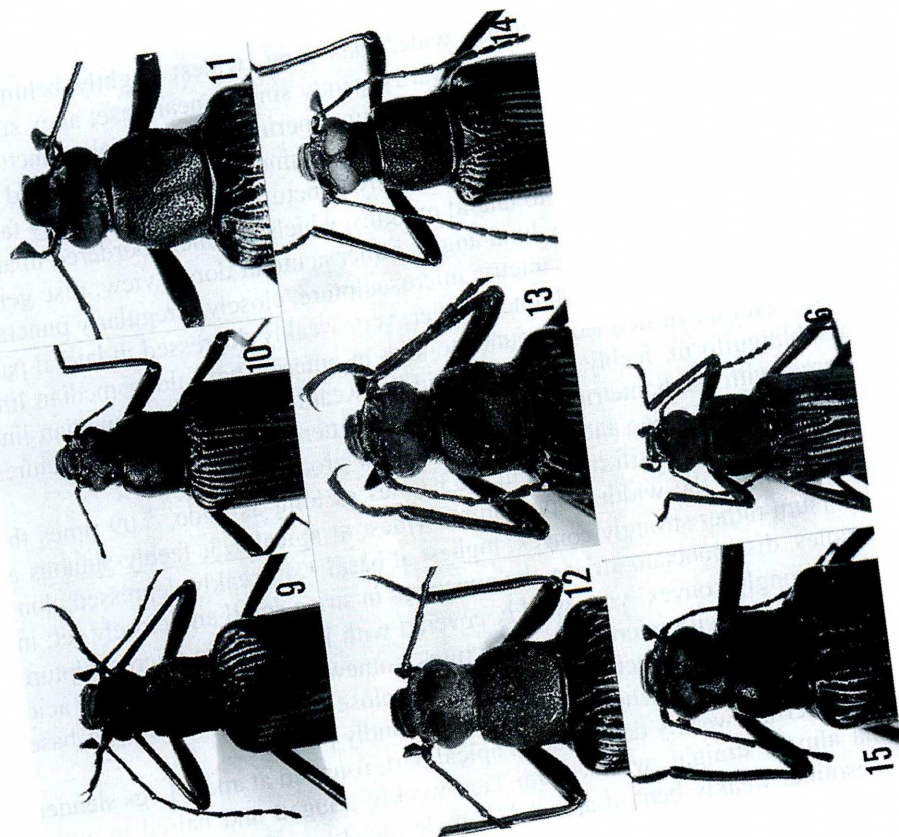
Holotype: ♂, Near Liukuei, Kaohsiung Hsien, S. Taiwan, 6-V-1991, W. CHEN leg. (Coll. OSAWA) (NHMIC). Paratype: 1 ex., same data as for the holotype.

*Notes.* This new species somewhat resembles *Strongylium carbonarium* GEBIEN, 1923, originally described from "Kosempo, Taihorin, Sokutsu (Banshoryo-Distr.)" in southern Taiwan, near the type locality of this species, but can be easily distinguished from the latter by the pronotum obviously divided into two parts by the median groove.

The specific name is given after Dr. Syozo OSAWA, who collected many Taiwanese tenebrionid species. All the specimens are preserved in the Natural History Museum and Institute, Chiba.







Figs. 1-16 (on pp. 198-199).—1-8. Habitus of *Strongylium* spp. from Taiwan.—1, *S. wadai* sp. nov., holotype, ♂; 2, *S. kuantouense* sp. nov., holotype, ♀; 3, *S. osawai* sp. nov., holotype, ♂; 4, *S. palingense* sp. nov., holotype, ♂; 5, *S. laszlorum* sp. nov., holotype, ♂; 6, *S. chutungense* sp. nov., holotype, ♂; 7, *S. chihpenense* sp. nov., holotype, ♂; 8, *S. chihpenense* sp. nov., holotype, ♂. Heads and pronota of *tehuashense* sp. nov.—9-16. Heads.—9, *S. wadai* sp. nov., holotype, ♂; 10, *S. kuantouense* sp. nov.; 11, *S. osawai* sp. nov.; 12, *S. palingense* sp. nov.; 13, *S. laszlorum* sp. nov.; 14, *S. chutungense* sp. nov.; 15, *S. tehuashense* sp. nov.; 16, *S. chihpenense* sp. nov.

*Strongylium palingense* sp. nov.

(Figs. 4, 12, 21–22)

Brownish black, with head and pronotum black and mat, scutellum, elytra and legs gently shining, ventral surface rather alutaceous; each surface almost glabrous. Body elongate, convex longitudinally.

Head subdecagonal, slightly covered with isodiametric microsculpture; clypeus semicircular, closely punctate, weakly depressed in basal part, inclined anteriorly in middle, bent ventrad and truncate in front, fronto-clypeal border curved and defined from frons; genae raised outwards, finely punctulate, with roundly produced outer margins, areas before eyes almost impunctate; frons somewhat X-shaped, coarsely rugoso-punctate, gently inclined anteriorly, vaguely impressed at the middle of anterior part, and also impressed a little more strongly at the middle of posterior part; interocular space narrow and about 1/11 times the width of the transverse diameter of an eye. Eyes large, somewhat transversely comma-shaped in dorsal view, strongly convex laterad, broadly inlaid into head. Antennae subfiliform, reaching basal part of elytra, ratio of the length of each segment from base to apex: 0.63, 0.23, 1.49, 1.09, 1.05, 0.88, 0.81, 0.79, 0.62, 0.64, 0.69.

Pronotum subtrapezoidal, slightly wider than long, widest slightly behind the middle, roundly narrowed fore- and backwards, gently sinuate near base; apex sublinear, obviously narrower than base, rimmed, the rim tapering laterad, finely punctulate, and softly interrupted at the middle; base gently bisinuous, clearly bordered and rimmed, the rim bolder than that of apex, minutely punctulate, rather noticeably tapering laterad; sides steeply declined to lateral margins, which are finely bordered in anterior 1/3; front angles not angulate, hind angles rather acute in dorsal view; disc gently convex, weakly covered with isodiametric microsculpture, closely, irregularly punctate, the punctures often connected with one another, very weakly depressed in lateral parts close to base, with an ill-defined impunctate area in anterior half along median line. Scutellum sublinguiform, feebly convex in middle, weakly ridged along median line, feebly covered with isodiametric microsculpture, scattered with shallow punctures, which are connected with one another by very shallow grooves.

Elytra elongated subfusiform, about 2.33 times as long as wide, 5.09 times the length and 1.71 times the width of pronotum, widest at apical 1/3, feebly sinuous at basal 1/3; dorsum rather strongly convex, highest at basal 1/4, weakly depressed along scutellar striae; disc punctato-striate, the punctures in striae small and closely set; intervals rather strongly convex, very weakly covered with isodiametric microsculpture, very sparsely scattered with microscopic punctures, somewhat transversely, finely aciculate, 1st and 2nd striae connected with each other close to base, 5th reaching base; humeri gently swollen and polished; apices feebly, roundly produced.

Male anal sternite weakly depressed in apical part, rounded at apex. Legs slender; male protibia almost straight, with ventral face weakly gouged and haired in apical 2/5; male mesotibia weakly bent at apical 1/3; male metatibia simply, weakly curved



dorsad; ratios of the lengths of pro-, meso- and metatarsomeres: 0.62, 0.32, 0.35, 0.37, 1.39; 2.34, 1.18, 0.91, 0.66, 1.63; 2.86, 1.35, 0.94, 1.72.

Male genitalia elongated fusiform, 3.48 mm in length and 0.61 mm in width; basal piece weakly curved in lateral view; fused lateral lobes elongated triangular, 1.62 mm in length, weakly curved in lateral view, with feebly prolonged, acute apices.

Body length: 22.5 mm.

Holotype: ♂, Shangpaling, N. Taiwan, 12-IV-1982, C.-K. YU leg. (NSMT).

*Notes.* This new species resembles *Strongylium lishanum* MASUMOTO, 1981, originally described from Lishan, central Taiwan, but can be distinguished from the latter by the larger and bolder body, with the head and pronotum noticeably covered with isodiametric microsculpture and closely punctate, the eyes much larger and more closely approximate, the pronotum almost evenly convex, the elytra more deeply striate, and the male genitalia a little bolder with the apices less strongly prolonged.

***Strongylium laszlorum* sp. nov.**

(Figs. 5, 13, 23-24)

Brownish black, with head darker in colour; each surface gently shining and almost glabrous. Body elongate, convex longitudinally.

Head subdecagonal, weakly covered with isodiametric microsculpture; clypeus semicircular, rather closely punctate, gently inclined anteriad, bent ventrad and truncate in front, fronto-clypeal border curved and weakly sulcate; genae raised outwards, finely punctate, with roundly produced outer margins, areas before eyes weakly depressed and almost impunctate; frons somewhat T-shaped, gently inclined anteriad, rather rugoso-punctate, somewhat rhombically impressed at the middle of posterior part; interocular space very narrow, weakly ridged, about 1/17 times the width of the transverse diameter of an eye; neck rather noticeably narrow. Eyes very large, subreniform in dorsal view, strongly convex laterad, broadly inlaid into head. Antennae subfiliform, reaching basal part of elytra, ratio of the length of each segment from base to apex: 0.57, 0.21, 1.04, 1.05, 0.83, 0.72, 0.65, 0.67, 0.62, 0.61, 0.63.

Pronotum wider than long (8:7), moderately roundly produced laterad, widest slightly before the middle, gently sinuate near base; apex sublinear, obviously narrower than base, rimmed, the rim tapering laterad, finely punctulate; base gently bisinuous, finely bordered and ridged, the ridge rather gently tapering laterad, minutely punctulate in posterior part; sides steeply declined to lateral margins, which are entirely, finely bordered; front angles rounded, hind angles subrectangular in dorsal view; disc gently convex, weakly depressed in middle and in lateral parts close to base, weakly covered with isodiametric microsculpture, closely, irregularly punctate, the punctures often connected with one another, with an ill-defined impunctate area in posterior part along median line, also with a pair of impressions at basal 1/3. Scutellum almost regularly triangular with weakly rounded sides, feebly covered with isodiametric microsculpture, slightly concave in middle, weakly ridged along the median line, scattered with punc-

tures, which become coarser and are connected with one another by shallow grooves.

Elytra elongated subfusiform, about 2.32 times as long as wide, 4.56 times the length and 1.95 times the width of pronotum, widest at apical 1/3, feebly sinuous slightly behind basal 1/3; dorsum rather strongly convex, highest at basal 1/3, weakly depressed along scutellar striae; disc punctato-striate, the striae shallow and fine, the punctures in striae rather closely set; intervals rather strongly convex, weakly covered with isodiametric microsculpture, sparsely scattered with small punctures, which are intermixed with minute ones, rather transversely, finely aciculate, 1st and 2nd striae connected with each other close to base, 5th reaching base; humeri gently swollen and polished; apices feebly, roundly produced.

Male anal sternite rather closely punctate, weakly depressed in apical part, very slightly angulate at apex. Male protibia almost straight, with ventral face weakly gouged and haired in apical half; male mesotibia gently curved intero-dorsad at apical 2/5; male metatibia almost straight, becoming bolder in apical part; ratios of the lengths of pro-, meso- and metatarsomeres: 0.32, 0.21, 0.25, 0.30, 1.29; 1.52, 0.69, 0.53, 0.48, 1.52; 2.16, 0.73, 0.66, 1.52.

Male genitalia subfusiform, 2.67 mm in length and 0.58 mm in width, rather strongly curved in lateral view; fused lateral lobes rather equilateral triangular, 1.53 mm in length, with weakly prolonged, acute apices.

Body length: 17.5 mm.

Holotype: ♂, "Taiwan, Prov. Nantou, 23 km NE. Puli, 500 m, 11-V-1997, Gy. M. LÁSZLÓ & G. LÁSZLÓ" (TMB). Paratype: 1 ex., Shizitou, Nantou Hsien, C. Taiwan, 7-V-1991, LUO C.-C. leg.

*Notes.* This new species also somewhat resembles *Strongylium carbonarium* GEBIEN, 1913, but can be distinguished from the latter by the smaller body (22–26 mm in *S. carbonarium*) with the eyes larger and approximate to each other, the pronotum narrower apicad, the scutellum not linguiform but regularly triangular, the elytra shorter and slightly widened posteriad, and the male genitalia with shorter basal piece.

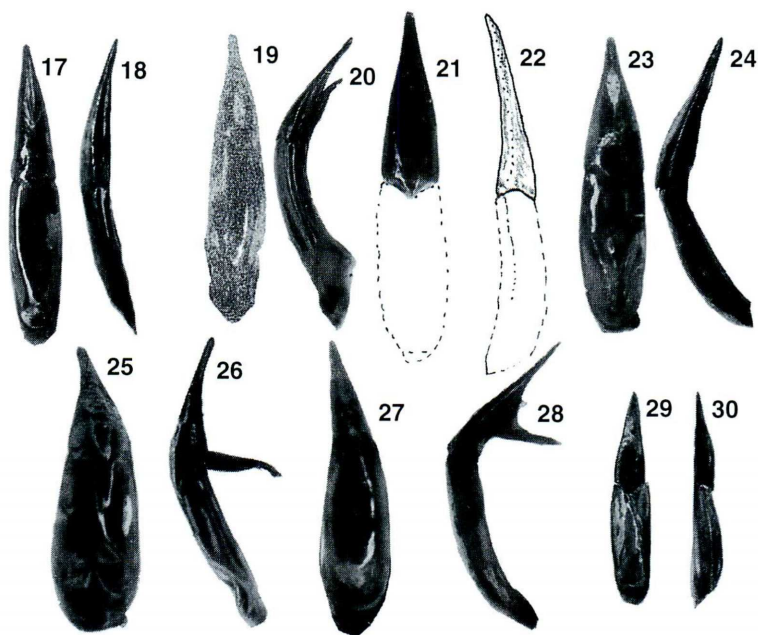
### *Strongylium chutungense* sp. nov.

(Figs. 6, 14, 25–26)

This new species closely resembles the previous new species, *S. laszlorum* sp. nov., but can be distinguished from the latter by the following characteristics:

Clypeus more closely, finely punctulate, fronto-clypeal border more widely curved; genae more strongly raised outwards, more closely punctulate, with outer margins subrectangular; frons longer, more closely, finely punctate, diatone obviously wider, about 1/5 times the width of transverse diameter of an eye; vertex with a medial impression less distinct; neck less narrowed. Eyes obviously smaller and shorter, subreniform in dorsal view. Antennae slightly slenderer, nearly reaching basal 1/3 of elytra, ratio of the length of each segment from base to apex: 0.61, 0.22, 1.29, 1.03, 1.04, 1.07, 0.87, 0.72, 0.65, 0.63, 0.68.





Figs. 17-30. Male genitalia. — 17-18, *S. wadai* sp. nov., 17, dorsal view, 18, lateral view; 19-20, *S. osawai* sp. nov., 19, dorsal view, 20, lateral view; 21-22, *S. palingense* sp. nov., 21, dorsal view, 22, lateral view; 23-24, *S. laszlorum* sp. nov., 23, dorsal view, 24, lateral view; 25-26, *S. chutungense* sp. nov., 25, dorsal view, 26, lateral view; 27-28, *S. tehuashense* sp. nov., 27, dorsal view, 28, lateral view; 29-30, *S. chihpenense* sp. nov., 29, dorsal view, 30, lateral view.

Pronotum more quadrate in dorsal view, 1.48 times as wide as long, more noticeably sinuous before base; apex less clearly bordered; base wider, more boldly ridged, the ridge scattered with fine punctures, both in anterior and posterior parts; lateral parts not bordered from ventral side; front angles more noticeably rounded, hind angles more strongly protruded obliquely posteriad; disc more closely, irregularly punctate, the punctures often fused with one another, particularly in antero-medial part, weakly depressed in antero-medial, postero-medial and postero-lateral parts, with a vague impression at basal 2/5 on each side. Scutellum slightly longer, scattered with small punctures in postero-lateral parts, without medial ridge.

Elytra 2.59 times as long as wide, 4.60 times the length and 1.56 times the width of pronotum, widest at apical 2/5; dorsum a little more strongly convex, highest slightly before the middle; disc more coarsely punctato-striate, the strial punctures rather ovate and not distinctly notching intervals, with scutellar striae longer; intervals more noticeably, somewhat transversely aciculate; humeri more strongly swollen; apices more strongly produced.

Male anal sternite with rounded apex. Legs obviously slenderer; ratios of the lengths of pro-, meso- and metatarsomeres: 0.60, 0.31, 0.32, 0.46, 1.43; 2.39, 0.97,

0.81, 0.67, 1.73; 3.02, 1.09, 0.82, 1.74.

Male genitalia wider, 2.78 mm in length, 0.61 mm in width, less strongly curved in lateral view; fused lateral lobes wider in basal part, 1.54 mm in length, with more strongly prolonged apices.

Body length: 17.5 mm.

Holotype: ♂, Chutung, Hsinchu Hsien, N. Taiwan, 3–VI–1991, LUO C.-C. leg. (NSMT).

*Strongylium tehuashense* sp. nov.

(Figs. 7, 15, 27–28)

This new species closely resembles *Strongylium endoi* MASUMOTO, 1982, from Liukuei, at the southern part of Taiwan, in having the apex of the male anal segment truncate and semicircularly concave, but can be distinguished from the latter by the following characteristics:

Body shorter (17 mm in length) and slightly more hunched. Clypeus a little more closely punctulate, noticeably depressed in basal part, more steeply inclined anteriad, transversely impressed in posterior part, with fronto-clypeal border similar to that of *S. endoi* and clearly impressed; genae more strongly, subrectangularly raised outwards; frons a little more steeply inclined, more deeply grooved medially, diatone about 1/4 times the width of transverse diameter of an eye; vertex less closely punctate, noticeably with a medial impression; neck less strongly narrowed. Eyes more strongly convex laterad, roundly inlaid into head. Antennae slightly slenderer, reaching basal 2/7 of elytra, ratio of the length of each segment from base to apex: 0.51, 0.20, 1.02, 1.04, 0.79, 0.69, 0.67, 0.61, 0.59, 0.53, 0.58.

Pronotum more transverse in dorsal view, 1.33 times as wide as long, more noticeably sinuous before base; apex similar to that of *S. endoi* (nearly straight, rimmed, the rim tapering laterad); base more strongly sinuous on each side, less boldly ridged, the ridge more closely punctulate in posterior (marginal) part; lateral parts less noticeably defined from ventral side; front angles more rounded, hind angles more strongly angulate; disc more closely, irregularly punctate, weakly grooved along medial line, depressed in postero-medial and postero-lateral parts, with pairs of impressions at the middle and basal 1/3, and also with a pair of vague impressions at basal 1/4. Scutellum rather regular triangular (widely linguiform in *S. endoi*), raised posteriad, gently convex in medial part, a little more finely, sparsely punctulate, with rather noticeable impressions at lateral side.

Elytra slightly slenderer, 2.23 times as long as wide, 4.45 times the length and 1.56 times the width of pronotum, widest near base and at apical 2/5; dorsum a little more strongly convex, highest at basal 1/3; disc more finely punctato-striate; intervals a little narrower and noticeably convex, sparsely punctulate and somewhat transversely aciculate (similar in *S. endoi*); humeri more strongly swollen laterad; apices more strongly produced.



Male anal sternite concave in apical part, with truncate apex. Legs slightly bolder; male protibia obviously, weakly bent exterior-dorsad, with ventral face weakly gouged and haired in apical 3/4, male meso- and metatibiae with outer margins weakly notched near bases, ratios of the lengths of pro-, meso- and metatarsomeres: 0.37, 0.25, 0.26, 0.25, 1.12; 1.97, 0.89, 0.63, 0.35, 1.22; 2.22, 0.82, 0.36, 1.24.

Male genitalia 3.20 mm in length, 0.62 mm in width; basal piece subovate, more strongly curved in lateral view; fused lateral lobes 1.61 mm in length, more strongly prolonged apicad, with a rather distinct longitudinal groove along median line.

Body length: 17.0 mm.

Holotype: ♂, Tehuashe, Nantou Hsien, C. Taiwan, 15-V-1991, Luo C.-C. leg. (NSMT).

*Strongylium chihpenense* sp. nov.

(Figs. 8, 16, 29–30)

Blackish brown, head and elytra weakly, and pronotum and scutellum very feebly bearing dark greenish tinge, ventral surface rather alutaceous; each surface almost glabrous. Body oblong-ovate, rather strongly convex.

Head somewhat transversely elliptical, weakly covered with isodiametric microsculpture; clypeus transversely subhexagonal, rather closely punctate, gently depressed in basal part, moderately inclined anteriorly, bent ventrad and truncate in front, with fronto-clypeal border widely curved, finely sulcate, and impressed on each side; genae rather oblique, weakly raised outwards, punctulate, with outer margins not angulate; frons finely T-shaped, rather steeply inclined anteriorly, weakly grooved along interior parts of eyes, almost impunctate in anterior part, sparsely punctulate in medial part (interocular space), rugoso-punctate and weakly impressed in posterior part; interocular space very narrow, about 1/11 times the width of the transverse diameter of an eye, ridged; vertex irregularly scattered with a little larger and smaller punctures, which often become rugulose, with a vague, somewhat longitudinal impression at the middle. Eyes rather large, somewhat transversely comma-shaped in dorsal view, strongly convex laterad, broadly, and a little obliquely inlaid into head. Antennae not so slender, reaching basal part of elytra, segments V to X rather noticeably dilated to each apex, ratio of the length of each segment from base to apex: 0.38, 0.14, 0.63, 0.52, 0.38, 0.35, 0.36, 0.34, 0.33, 0.32, 0.35.

Pronotum somewhat barrel-shaped, wider than long (5:4), widest slightly before the middle, very feebly sinuate near base; apex sublinear, finely rimmed, the rim tapering laterad, punctulate; base weakly bisinuous, finely bordered and ridged, the ridge interrupted at the middle, and gently tapering laterad, punctulate in posterior part; sides steeply declined to lateral margins, which are entirely, finely bordered; front angles rounded, hind angles subrectangular in dorsal view; disc gently convex, weakly depressed in lateral parts closely to base, covered with isodiametric microsculpture, closely, irregularly punctate, the punctures often connected with one another, and each

with a short erect hair at the centre. Scutellum sublinguiform, convex, weakly covered with isodiametric microsculpture, rather noticeably aciculate in lateral parts.

Elytra elongated subfusiform, about 2.22 times as long as wide, about 4 times the length and 1.38 times the width of pronotum, widest both near base and at apical 2/5, feebly sinuous at basal 1/3; dorsum rather strongly convex, highest at basal 1/4, weakly depressed along scutellar striae; disc punctate and grooved, the punctures in grooves small but strong, transversely notching intervals, 1st groove and 2nd, 3rd and 4th connected with each other close to base, 5th reaching base; intervals ridged, very weakly covered with isodiametric microsculpture, sparsely scattered with microscopic punctures; humeri gently swollen and polished; apices feebly, roundly produced.

Male anal sternite shagreened and pubescent, subelliptically depressed in apical part, truncate at apex. Legs medium-sized; male protibia almost straight, with ventral face slightly gouged and haired in apical 3/5; male mesotibia very slightly curved dorsad; male metatibia feebly twisted, becoming bolder in apical part, with the anterior face weakly gouged and haired in basal half; ratios of the lengths of pro-, meso- and metatarsomeres: 0.26, 0.21, 0.22, 0.21, 0.66; 0.97, 0.48, 0.34, 0.31, 0.65; 0.96, 0.37, 0.32, 0.70.

Male genitalia elongated fusiform, 2.02 mm in length and 0.36 mm in width, gently curved in lateral view; fused lateral lobes elongated equilateral triangular in dorsal view, 0.83 mm in length, punctulate and asperate in anterior part, with acute apices.

Body length: 11.3 mm.

Holotype: ♂, "Taiwan, Prov. Taitung, Chihpen, 390 m, 5–VII–1996, G. CSORBA & L. NÉMETH" (TMB).

*Notes.* No species occurring in Taiwan and its neighboring areas resemble this new species.

### List of the Taiwanese Species of the Genus *Strongylium*

#### Genus *Strongylium* KIRBY, 1818

*Strongylium* KIRBY, 1818, Trans. Linn. Soc. London, **12**: 417. Type species: *Strongylium chalconotum* KIRBY, 1818.

*Crossoscelis* GEBIEN, 1913, Arch. Naturg., (A), **79** (9): 52.

*Strongylium albopilosum* GEBIEN, 1913

*Strongylium albopilosum* GEBIEN, 1913, Arch. Naturg., (A), **79** (9): 44. Type locality: Kosempo, Kaohsiung Hsien.

*Distr.*: Taiwan.

*Strongylium alishanum* MASUMOTO, 1981

*Strongylium alishanum* MASUMOTO, 1981, Elytra, Tokyo, **9**: 15. Type locality: Erh-wan-ping, Alishan, Chiayi Hsien.

*Distr.*: Taiwan.

*Strongylium andoi* MASUMOTO, 1996

*Strongylium andoi* MASUMOTO, 1996, Elytra, Tokyo, **24**: 138. Type locality: Mt. Kuantoushan, Nantou Hsien.



*Distr:* Taiwan.

***Strongylium carbonarium* GEBIEN, 1913**

*Strongylium carbonarium* GEBIEN, 1913, Arch. Naturg., (A), **79** (9): 47. Type locality: Kosempo, Kaohsiung Hsien.

*Distr:* Taiwan.

***Strongylium chilipense* sp. nov.** Type locality: Chihpen, Taitung Hsien.

*Distr:* Taiwan.

***Strongylium chutungense* sp. nov.** Type locality: Chutung, Hsinchu Hsien.

*Distr:* Taiwan.

***Strongylium claudum* (GEBIEN, 1913)**

*Crossoscelis clauda* GEBIEN, 1913, Arch. Naturg., (A), **79** (9): 53. Type locality: Suisharyo.

*Distr:* Taiwan.

***Strongylium cultellatum taiwanum* Si. NOMURA, 1963**

*Strongylium marseuli taiwanum* Si. NOMURA, 1963, Ent. Rev. Japan, Osaka, **15**: 40. Type locality: Mt. Ari.

*Distr:* Taiwan.

***Strongylium endoi* MASUMOTO, 1982**

*Strongylium endoi* MASUMOTO, 1982, Elytra, Tokyo, **10**: 55. Type locality: Liukuei, Kaohsiung Hsien.

*Distr:* Taiwan.

***Strongylium erythrocephalum* (FABRICIUS, 1801)**

*Helops erythrocephalus* FABRICIUS, 1801, Syst. Eleuth., **1**: 156. First record from Taiwan: Takao.

*Distr:* Taiwan; SE. Asia, India.

***Strongylium formosanum* GEBIEN, 1913**

*Strongylium formosanum* GEBIEN, 1913, Arch. Naturg., (A), **79** (9): 45. Type locality: Tainan.

*Distr:* Taiwan.

***Strongylium fujitai* MASUMOTO, 1981**

*Strongylium fujitai* MASUMOTO, 1981, Elytra, Tokyo, **8**: 46. Type locality: Ulai, Taipei Hsien.

*Distr:* Taiwan.

***Strongylium miwai* MASUMOTO, 1996**

*Strongylium miwai* MASUMOTO, 1996, Elytra, Tokyo, **24**: 139.

*Strongylium insolitum* Miwa, 1939, Zool. Mag., Tokyo, **51**: 413 [nec GEBIEN, 1913]. Type locality: Karenokô (Hualiengang), Hualien Hsien.

*Distr:* Taiwan.

***Strongylium katsumii* MASUMOTO, 1999**

*Strongylium katsumii* MASUMOTO, 1999, Elytra, Tokyo, **27**: 347. Type locality: Lishan, Taichung Hsien.

*Distr:* Taiwan.

***Strongylium kentingense* MASUMOTO, 1981**

*Strongylium kentingense* MASUMOTO, 1981, Elytra, Tokyo, **8**: 47. Type locality: Kenting, Pingtung Hsien.

*Distr:* Taiwan.

***Strongylium kuantouense* sp. nov.** Type locality: Kuantoushan, Nantou Hsien.

*Distr:* Taiwan.

***Strongylium lasdorum* sp. nov.** Type locality: "23 km NE. Puli, 500 m.", Nantou Hsien.

*Distr:* Taiwan.

***Strongylium lishanum* MASUMOTO, 1981**

*Strongylium lishanum* MASUMOTO, 1981, Elytra, Tokyo, **8**: 43. Type locality: Lishan, Taichung Hsien.

*Distr:* Taiwan.

***Strongylium longissimum* GEBIEN, 1913**

*Strongylium longissimum* GEBIEN, 1913, Arch. Naturg., (A), **79** (9): 50. Type locality: Sokutsu (Banshoryo Distr.), Kaohsiung Hsien.

*Distr:* Taiwan.

***Strongylium lutaense*** MASUMOTO, 1992*Strongylium lutaense* MASUMOTO, 1992, Elytra, Tokyo, **20**: 93. Type locality: Lutaou, Taitung Hsien.

Distr.: Taiwan.

***Strongylium nakanei*** MASUMOTO, 1981*Strongylium nakanei* MASUMOTO, 1981, Elytra, Tokyo, **8**: 49. Type locality: Sungkang, Nantou Hsien.

Distr.: Taiwan.

***Strongylium nanfangum*** MASUMOTO, 1982*Strongylium nanfangum* MASUMOTO, 1982, Elytra, Tokyo, **10**: 53. Type locality: Kuskusu–Suchungchi, Pingtung Hsien.

Distr.: Taiwan.

***Strongylium ochii*** MASUMOTO, 1992*Strongylium ochii* MASUMOTO, 1992, Elytra, Tokyo, **20**: 92. Type locality: Liukuei, Kaohsiung Hsien.

Distr.: Taiwan.

***Strongylium okumurai*** MASUMOTO, 1981*Strongylium okumurai* MASUMOTO, 1981, Elytra, Tokyo, **8**: 44. Type locality: Ulai, Taipei Hsien.

Distr.: Taiwan.

***Strongylium osawai*** sp. nov. Type locality: Near Liukuei, Kaohsiung Hsien.

Distr.: Taiwan.

***Strongylium palingense*** sp. nov. Type locality: Taipei Hsien.

Distr.: Taiwan.

***Strongylium pseudogibbosipenne*** MASUMOTO, 1981*Strongylium pseudogibbosipenne* MASUMOTO, 1981, Elytra, Tokyo, **8**: 43. Type locality: Meifeng, Nantou Hsien.

Distr.: Taiwan.

***Strongylium schenklengi*** GEBIEN, 1913*Strongylium schenklengi* GEBIEN, 1913, Arch. Naturg., (A), **79** (9): 48. Type locality: Tainan.

Distr.: Taiwan.

***Strongylium sinauatipenne*** MIWA, 1939*Strongylium sinauatipenne* MIWA, 1939, Zool. Mag., Tokyo, **51**: 414. Type locality: Shintiku (Hsinchu Hsien).*Strongylium yasumatsui* M.T. CHŪŌ, 1968, Kontyū, Tokyo, **36**: 16.

Distr.: Taiwan.

***Strongylium szentivanyi*** KASZAB, 1941*Strongylium Szent-Iványi* KASZAB, 1941, Stett. ent. Ztg., **102**: 71. Type locality: Taihorinsho (Chiayi Hsien).

Distr.: Taiwan.

***Strongylium tehuashense*** sp. nov. Type locality: Tehuashe, Nantou Hsien.

Distr.: Taiwan.

***Strongylium wadai*** sp. nov. Type locality: Pulu Shennu, Ilan Hsien.

Distr.: Taiwan.

***Strongylium yokoyamai*** MASUMOTO, 1981*Strongylium yokoyamai* MASUMOTO, 1981, Elytra, Tokyo, **8**: 48. Type locality: Meifeng, Nantou Hsien.

Distr.: Taiwan.

***Strongylium yasuhikoi*** MASUMOTO, 1996*Strongylium yasuhikoi* MASUMOTO, 1996, Elytra, Tokyo, **24**: 137. Type locality: Mt. Kuantoushan, Nantou Hsien.

Distr.: Taiwan.

***Strongylium zoltani*** MASUMOTO, 1981*Strongylium zoltani* MASUMOTO, 1981, Elytra, Tokyo, **9**: 16. Type locality: Fenchihu, Chiayi Hsien.

Distr.: Taiwan.



## 要 約

益本仁雄：アジア産ナガキマワリ族(Strongyliini)の研究. XVI. 台湾産ナガキマワリ属(*Strongylium*)について. —— アジア産ナガキマワリ族(Strongyliini)研究の第16回として, 台湾産のナガキマワリ属(*Strongylium*)を取り上げた. 8種の新種を記載し, それぞれ *Strongylium wadai* sp. nov., *S. kuantouense* sp. nov., *S. osawai* sp. nov., *S. palingense* sp. nov., *S. laszlorum* sp. nov., *S. chutungense* sp. nov., *S. tehuashense* sp. nov., および *S. chihpenense* sp. nov. と命名した. また, 台湾に分布する同属のすべての種の目録も用意した.

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